

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date
23 June 2005 (23.06.2005)

PCT

(10) International Publication Number
WO 2005/057677 A1

(51) International Patent Classification⁷: **H01L 51/30, C08G 61/12**

(74) Agent: **OHIE, Kunihisa**; Ohie Patent Office, Selva-Ningyocho 6F, 14-6, Nihonbashi-Ningyocho 2-chome, Chuo-ku, Tokyo 103-0013 (JP).

(21) International Application Number: **PCT/JP2004/018668**

(22) International Filing Date: 8 December 2004 (08.12.2004)

(25) Filing Language: **English**

(26) Publication Language: **English**

(30) Priority Data:
2003-410097 9 December 2003 (09.12.2003) JP
60/529,106 15 December 2003 (15.12.2003) US

(71) Applicant (for all designated States except US): **SHOWA DENKO K.K. [JP/JP]; 13-9, Shiba Daimon 1-chome, Minato-ku, Tokyo 105-8518 (JP).**

(72) Inventors; and

(75) Inventors/Applicants (for US only): **KOYAMA, Tamami** [JP/JP]; c/o Corporate R & D Center, Showa Denko K.K., 1-1, Ohnodai 1-chome, Midori-ku, Chiba-shi, Chiba 267-0056 (JP). **KONDO, Kunio** [JP/JP]; c/o Corporate R & D Center, Showa Denko K.K., 1-1, Ohnodai 1-chome, Midori-ku, Chiba-shi, Chiba 267-0056 (JP).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

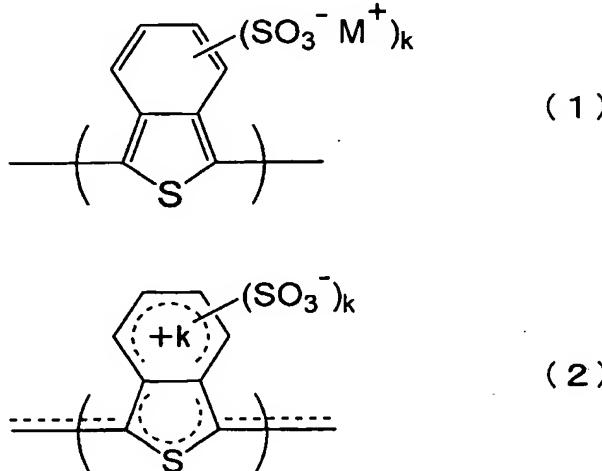
- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

[Continued on next page]

(54) Title: POLYMER FOR ANODE BUFFER LAYER, COATING SOLUTION FOR ANODE BUFFER LAYER, AND ORGANIC LIGHT EMITTING DEVICE



WO 2005/057677 A1



(57) **Abstract:** The present invention relates to: a polymer for an anode buffer layer in an organic light emitting device comprising a self-doping conductive polymer having a pH value of 3 to 7 in a 1% by mass aqueous solution, the polymer containing monomer unit (s) represented by the following formula (1) and/or (2) wherein M⁺ represents a hydrogen ion, an alkali metal ion, or a quaternary ammonium ion, k represents 1 or 2, +k represents a positive charge number, and a hydrogen atom in the aromatic ring may be replaced by a substituent, an anode buffer layer coating solution comprising the polymer, and an organic light emitting device comprising an anode buffer layer using the polymer. The polymer of the present invention can overcome the problem of deterioration of light emitting layer due to extrinsic dopant.